Autism, Intense Interests and Support in School: From Wasted Efforts to Shared Understandings

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Abstract

Having intense or "special" interests and a tendency to focus in depth to the exclusion of other inputs, is associated with autistic cognition, sometimes framed as "monotropism". Despite some drawbacks and negative associations with unwanted repetition, this disposition is linked to a range of educational and longer-term benefits for autistic children. Meanwhile however, and notwithstanding efforts on the part of school staff to provide support, the inclusion of autistic children in the school curriculum and additional activities is poor. Therefore, in this article, by employing empirical examples from a case study based in five mainstream primary schools in England, and elucidated via thematic analysis, I consider the role and functions of the strong interests of the 10 autistic children who participated, incorporating the views of school staff (n = 36), parents (n = 10) and a sample of autistic adults (n = 10). I delineate how the school staff responded to the intense interests of the autistic children and argue how accepting this cognitive trait can be related to a range of educational, social and affective advantages for the children, as well as less effortful, more empathetic and skilled support on the part of school staff, including a reduction in prompting and task repetition. Furthermore, by suggesting comparisons with the interests and motivations of all children in school, I posit that autistic children in particular, and all children in general, might gain from a deeper cognisance of this trait, which could therefore be incorporated profitably into curricular and pedagogical practices.

Key Words

autism *special interests* *monotropism* *educational inclusion* *flow* *prompting*

Introduction

Being focused intensely on a particular subject or activity is considered a defining characteristic of autism (American Psychiatric Association [APA] 2013; Lawson 2011; Murray 2018), and some literature in the autism field has been devoted to analysing the manifestations, roles and functions of this predisposition (Mercier, Mottron and Belleville 2000; Mottron et al. 2013; Murray, Lesser and Lawson 2005; Spiker, Enjey Lin, Van Dyke, and J. Wood 2012). Associated by some with "monotropism" – a tendency to concentrate deeply on an activity to the exclusion of other inputs (Murray 1992; Murray et al. 2005) - as well as unwanted, repetitive behaviour and speech (Wing and Gould 1979; van Santen, Sproat and Presmanes Hill 2013), researchers in education have also considered the issue of "special interests" in relation to autistic children in schools (Gunn and Delafield-Butt 2016; Hesmondhalgh and Breakey 2001; Winter-Messiers et al. 2007). However, the implications of this cognitive and affective trait on their overall educational inclusion - which continues to be fractured and problematic in many countries (Pellicano, Bölte and Stahmer 2018) – are not so well-drawn (Jones et al. 2008; Wittemeyer et al. 2011), while even less attention is devoted to school staff, and how they might be concomitantly impacted by this phenomenon (Winter-Messiers 2007; Ravet 2011).

Therefore, in this article, I will describe how the intense interests of the 10 autistic children in my study affected their learning, social interaction, communication, independence and general well-being in school (Gunn and Delafield-Butt 2016), and also interlinked with their longer-

term outcomes (Mottron 2011). Crucially, I will delineate the ways in which school staff perceived this disposition, and demonstrate how, despite some drawbacks to this cognitive trait (Murray et al. 2005; Gunn and Delafield-Butt 2016), their desired aims in providing support to the autistic children can be largely met by enabling them to access their strong interests. In addition, I will suggest how understanding better the manifestations and role of the intense interests of autistic children can shed light on the interests and motivations of all children in school (Schiefele 1991; Tomlinson et al. 2003), potentially providing important understandings for the educational engagement and inclusion of whole school populations.

Terminology

Certain descriptors of the intense interests of autistic people, such as "restricted", "fixated" (APA 2013), "obsessive" (Baron-Cohen and Wheelwright 1999) and "ritualistic" (Baker 2000), can imply impairment and dysfunction, a problematic trait which must be prevented or remediated, especially when associated with repetition (Bodfish, Symons, Parker and Lewis 2000; Boyd, Woodward and Bodfish 2011). Indeed, this predisposition has been associated with obsessive, repetitive behaviour (Baron-Cohen and Wheelwright 1999), perseveration (Vismara and Lyons 2007) and OCD (Obsessive-Compulsive Disorder) (Spiker et al. 2012; Ruzzano, Borsboom and Geurts 2014). Furthermore, even the term "special interests" (Winter-Messiers 2007; C.J. Jordan and Caldwell-Harris 2012), while ostensibly more positive, nevertheless suggests a disposition which is at the least uncommon, setting the autistic person in a category apart from "normal" functioning (Runswick-Cole and Hodge 2009).

Other accounts, however, which employ terms such as "preferred interests" (Koenig and Williams 2017), or "absorbing interests" (Winter 2012), imply a disposition which ought not to be pathologised, although this distinction in terminology is not clear, with some reports portraying a predominantly positive view of the interests of autistic children and adults using terms such as "restricted interests" (Mercier et al. 2000; Gunn and Delafield-Butt 2016), or

"fixations" (Sinclair 2012). Nevertheless, as my own research findings indicate, broadly non-pejorative terms such as "interests", "strong interests", "intense interests" etc. are more suitable to describe the phenomenon I will now explore.

Methodology

My study operated within an interpretative, phenomenological paradigm (Flyvbjerg 2006; Smith, Flowers and Larkin 2009) and was informed, *inter alia*, by theoretical analyses of inclusion (Allan 2008; Liasidou 2012; Thomas 2012). Set within a case study design (Denscombe 1998; Flyvbjerg 2006; Thomas 2011; 2016) and based in five mainstream primary schools in a single Local Authority in England, my aim was to find out if and how the autistic children were included in the core curriculum and assessment activities in those schools and to ascertain the extent to which they participated in different aspects of school life. Given the high levels of exclusion experienced by autistic children (Batten et al. 2006; Humphrey 2008), the overarching rationale for my research was to understand better how their educational inclusion and, by extension, their longer-term outcomes, could be improved.

My participants consisted of 10 autistic children aged 4 – 10, some of their parents (n = 10), 36 school staff (teachers, teaching assistants [TAs], Special Educational Needs Coordinators [SENCOs] and deputy Head teachers) and a sample of autistic adults (n = 10) who I recruited on a UK-wide basis. This was a mixed methods project (Gorard and Taylor 2004; Gorard 2013) incorporating semi-structured interviews, questionnaires, structured observations (including event sampling), unstructured observations and focus groups. Prior to data collection, I spent a period of familiarisation with each of the children to ensure they were relaxed with my presence and to ascertain which data collection methods would be suitable for them. The autistic adults, who participated via semi-structured interview (using telephone, email or Skype text, depending on their individual preferences), were asked to reflect on different aspects of their

experience in mainstream primary schools when they were younger and, along with all of the other adult participants, to provide their own descriptions and understandings of autism.

The observations were of the children only and focused on their access to curriculum subjects, the support they received, their participation and general well-being in class. The times and organisation of all of my visits to the schools and the data collection with children, parents and staff, were agreed in advance with the resident SENCO. In addition, for all except the two youngest children, who did not have an established method of communication, more than one method of data collection was employed: this flexible and iterative approach (Richards 2005) was essential to facilitate their participation in my research.

My data were subsequently analysed principally via thematic or content analysis (Braun and Clarke 2006; Miles and Huberman 1994; Strauss and Corbin 1998), using a process of constant comparison (Glaser and Strauss 1967) in which, for example, key words, phrases and expressions were identified and compared in context (Ryan and Bernard 2003). My study was additionally informed by discourse analysis (Wetherell, Taylor and Yates 2001), arguably of particular relevance in the disability field (Grue 2015) and highlighting how, within an interpretative paradigm, analytical eclecticism can be efficacious (Coffey and Atkinson 1996; Thomas 2011).

My process of data analysis consisted of a number of stages or phases (Braun and Clarke 2006; Miles and Huberman 1994; Richards 2005; Strauss and Corbin 1998), with interview, focus group and observation data drawn together through “codes” (Braun and Clarke, 2006; Robson, 2011; Saldaña 2016; Strauss and Corbin 1998) using NVivo. These are fluid, “heuristic” devices (Coffey and Atkinson, 1996; Saldaña, 2016) which permit the mechanics of the data analysis to take place. I employed the model offered by Richards (2005), in which the three stages can be very briefly summarised as “descriptive”, “topic” and “analytical”, and also used

some of the models proposed by Saldaña (2016), such as “holistic”, “structural” and “values coding” in order to fine tune the process overall.

Combined with my findings from the questionnaire data and facilitated by mapping procedures (Thomas 2013), I was able to devise eight, interlinked themes:

1. Support for Children
2. School Curriculum
3. Educational Priorities
4. Assessment and Tests
5. Communication
6. Interests
7. Inclusion and Exclusion
8. Descriptions of Autism

These themes were derived ultimately from a combination of an *a priori* approach (Ryan and Bernard 2003) through the application of my research questions and theoretical constructs, and an inductive approach, whereby unanticipated findings could be explored (Strauss and Corbin 1998; Richards 2005; Braun and Clarke 2006). The theme of “Interests”, which I describe in this paper, falls predominantly into the latter category: I did not ask any participants directly about the issue of interests, the evidence for which was revealed inductively through the process of data collection and analysis.

In this paper, all 10 of the autistic children who participated are referenced at some point. Their names (in alphabetical order, below) have been changed and reflect the cultural diversity of the urban area where the schools were based. Their names and ages are as follows:

Alex	5
Bobby	4

Elias	10
Jordan	7
Lucy	7
Marcus	9
Michael	8
Piotr	4
Rashan	9
Valentin	8

Given the particular focus on the autistic children in this account, none of the adults are provided with pseudonyms or a number code. They are simply indicated by "a teacher" or "a TA" etc.

In the remainder of this paper, I will first discuss the concept of "monotropism" and autism, and how it has been associated with strong interests. Then, I will present some of my findings in relation to the ways in which the autistic children in my study were supported in school and how this intersected with their intense interests. These points will then be cohered within a summative discussion and conclusion.

Monotropism

The concept of monotropism, which is described as denoting a tendency to focus on a single or narrow number of issues, items or activities to the exclusion of others, but with a high level of focus, is increasingly associated with autistic cognition (Lawson 2011; Milton 2017; Murray et al. 2005). These areas of focus are experienced in a very deep and compelling way, meaning there is "hyper-awareness within the attention tunnel" (Murray et al. 2005, p. 142), but a relative lack of cognisance of anything outside of it. A monotropic thinking style can therefore

result in situations where the language of others is considered irrelevant (Williams 1992/1999; Ravet 2011) or experienced as overwhelming (Murray et al. 2005), potentially creating difficulties for autistic children and school staff alike.

Monotropism has been compared with a "polytropic" thinking style (Murray 2014), which suggests an increased range of interests and focus. However, these are inevitably explored in less depth, with little sense of urgent preoccupation, and concentration is more diffuse (McDonnell and Milton 2014). Polytropism has also been associated with multi-tasking (Lawson 2011) - the ability to switch quickly from one activity to another - which in some work environments is considered to be a desirable skill (Bühner, Konig, Pick and Krumm 2006).

The concept of monotropism nevertheless constitutes a more constructive way of appraising the cognitive dispositions of autistic people, setting aside pejorative framings such as "fixated" (APA 2013) or "obsessive" (Baron-Cohen and Wheelwright 1999), to be replaced instead by an "interest model" of autism in which the advantages of this cognitive style are promoted (McDonnell and Milton 2014; Murray 2018). Moreover, this model also creates opportunities to revaluate weak central coherence theory - a posited difficulty in understanding the general meaning of information rather than focusing on individual details (Briskman, Frith and Happé 2001) – as well as the disparaging notion of "repetitive behaviour" (Bodfish et al. 2000), which could also be usefully reconsidered from the perspective of monotropism (McDonnell and Milton 2014). Indeed, notwithstanding the negative association of autism with "obsessive, stereotyped pursuits" (Wing and Gould 1979, p. 16), task repetition, which resulted in effortful prompting, was a difficulty associated with some of the school staff in my study, as will be discussed shortly.

Monotropism and Intense Interests

If autism, monotropism and a tendency to experience interests in an intense and compelling way are interlinked (Milton 2017), there are potentially important implications for autistic children in schools. Indeed, notwithstanding some difficulties associated with a monotropic thinking style, such as not understanding the perspectives of others (Murray et al. 2005), enabling autistic children to engage with their strong interests has been found to be predominantly advantageous, rather than deleterious, in school environments (Gunn and Delafield-Butt 2016). Positive effects include improved learning and curriculum access (Hesmondhalgh and Breakey 2001; Wittemeyer et al. 2011), better cooperativity and social skills (Gunn and Delafield-Butt 2016), increased participation in after-school clubs (Jones et al. 2008) and improved fine motor skills and social and communication abilities (Winter-Messiers 2007). Furthermore, such an approach enables autistic children "to relax, overcome anxiety, experience pleasure, and make better sense of the physical world" (Gunn and Delafield-Butt 2016, p. 411), and to moderate their levels of arousal, thus impacting positively on their emotional well-being too (Winter-Messiers 2007).

Furthermore, longer-term benefits have been associated with the pursuit of intense interests, with relatively few negative effects overall (Gunn and Delafield-Butt 2016), which in themselves might only occur if autistic people are pressured to reduce or adapt their interests (Mercier et al. 2000). Such a disposition can lead to self-taught expertise, for example (Mottron 2011), and so is associated with a high level of skill and even savant abilities (Mottron et al. 2013). Being able to develop strong interests can therefore constitute a potential route to employment (Wittemeyer et al. 2011; Koenig and Williams 2017) and help create the possibility of a fulfilling adult life (Jones et al. 2008; Grove, Hoekstra, Wierda and Begeer 2018) providing, *inter alia*, a sense of well-being, opportunities for personal growth, social learning and development (Mercier et al. 2000; Koenig and Williams 2017).

Nevertheless, the potential positive impacts of engagement with strong interests for autistic children and adults are not always recognised (Gunn and Delafield-Butt 2016). For example, Mercier et al. (2000) found that some of their autistic participants had been pressured to modify, diminish or even "extinguish" their interests, putatively in order to gain social acceptance. This cessation brought with it "a sort of mourning process" (ibid., p. 422), and was also at "the cost of giving up their exceptional abilities" (ibid., p. 423). Moreover, Gunn and Delafield-Butt (2016) assert that the perception of intense interests as problematic behaviour which needs to be "eliminated" can result in deeply concerning practices such as restraint or electric shock treatment (Charlop-Christy and Haymes 1996 [cited in Gunn and Delafield-Butt 2016, p. 424]).

Findings

Repetitive Activities and Prompting

Notwithstanding the typically pejorative association between autism and repetitive behaviour (Baron-Cohen and Wheelwright 1999; Bodfish et al. 2000), I noted during observations an expectation of and requirement for a high degree of repetition in the learning programmes of some of the autistic children in the schools where I collected data. This was either in connection with the activities the children were asked to carry out, the materials employed, or the instructions issued. This applied particularly if the autistic children had alternative targets and specially provided, differentiated learning materials, as was the case with Bobby, Piotr, Rashan and, occasionally, Lucy. Indeed, four of the teachers, one of the TAs and one of the parents asserted in interviews that repetition was a valuable teaching tool for autistic children.

For example, Rashan, who struggled greatly with writing activities, which usually consisted of rote copying, was asked to write repeatedly his own sentences as part of an ostensibly creative exercise set by the class teacher. During this unstructured observation, when Rashan was expected to develop a leaflet, he was made to wait while the TA copied a paragraph of three

sentences he had already written in his exercise book onto a white board, which Rashan then had to copy onto the leaflet, and subsequently, without any apparent educational benefit, back into his exercise book. Indeed, this entire task of 30 minutes and 30 seconds duration caused Rashan to become restless, bored, and upset, as indicated by comments such as "*But I'm hungry*", "*It will take too long*", "*It's killing me*", "*It's annoying me*", "*I can't*", as well as the numerous diversions he attempted to create, including chanting lines from action hero videos, an area of great interest to him.

Furthermore, I found that task repetition was also associated with a high level of prompting on the part of school staff, be it verbal, gestural (e.g. pointing) or physical (e.g. hand-over-hand). For example, during an unstructured observation involving Piotr where he was asked to match plastic bears of different colours with pictures on plastic strips by way of a differentiated Maths activity, as well as a high degree of physical prompting, his TA issued him with almost identical questions (e.g. "*Where does the bear go?*") and instructions (e.g. "*Find the bear*") 73 and 53 times respectively over the course of the 12 minutes that the activity lasted, equating to 10.5 questions or instructions per minute. Moreover, the TA subsequently informed me that this particular exercise had been in place for a number of weeks, with Piotr expected to carry it out three times a day, but four times a day if he had refused to complete it on any of those occasions.

Therefore, some staff refused to desist from or alter learning approaches and targets which might have very little educational value, ascribing the child's failure to comply to difficulties inherent to autism, rather than the tedious or repetitive nature of the activity itself. For example, during interviews, 23 out of 36 of the school staff stated that they perceived autistic children as being set in their ways, self-oriented and routine-bound, yet they failed to perceive their own adherence to the schools' routines and norms, or their inability to alter or adapt activities in which both adult and child were "stuck". Indeed, during an interview, one of the parents expressed a concern that her son's targets had not been changed for months. Furthermore,

according to the questionnaires completed by the SENCOs, very few of the autistic children were provided with prompters during tests (R. Wood 2016), which is a permitted access arrangement in national assessments (Department for Education [DfE] 2018), indicating a degree of confusion about when prompting can be a helpful support mechanism, rather than a tool for compliance.

Benefits to Autistic Children of Accessing Interests

Unlike the repetitive and demotivating activities described, the advantages of enabling the autistic children to access their interests were found to be widespread, incorporating a range of areas such as access to the curriculum and tests, communication, motor skills, attention to detail, socialisation, independence and well-being. Indeed, this circumstance was, in some cases, the lynchpin to their very participation in school life, being linked additionally to expertise and positive outcomes in the future for the autistic children.

Due to the extensive nature of the benefits found via interviews, observations, questionnaires and focus groups, I have summarised these in Table 1 below, which I follow by a few representative and illustrative examples.

Table 1: Advantages of Intense Interests

Area of impact	Participants **Total children (n = 10); autistic adults (n = 10); parents (n = 10); school staff (n = 36)**
Improved access to learning, curriculum & tests	Alex; Bobby; Elias; Jordan; Lucy; Michael; Piotr; Rashan; Valentin Autistic adults (n = 4) Parents (n = 3) School staff (n = 9)
Task completion	Bobby; Rashan. School staff (n = 5)
Improved communication	Alex; Bobby; Jordan; Lucy; Marcus; Rashan School staff (n = 1)
Increased socialisation (including extra-curricular activities)	Alex; Elias; Jordan; Marcus; Rashan Autistic adults (n = 1) Parents (n = 1) School staff (n = 3)
Greater independence	Bobby; Jordan; Lucy; Marcus; Michael; Piotr; Rashan

Intrinsic enjoyment of activity	Alex; Bobby; Elias; Jordan; Lucy; Marcus; Piotr; Rashan
Improved inclusion/belonging to school community	Bobby; Piotr; Rashan; Valentin Autistic adults (n = 1) School staff (n = 5)
Source of comfort	Alex; Bobby; Elias; Jordan; Lucy; Marcus; Michael; Piotr; Rashan Parents (n = 1) School staff (n = 2)
Enjoyment of/coping with school	Elias; Jordan; Lucy; Michael Autistic adults (n = 1)
Better motor skills	Bobby; Elias; Piotr; Rashan
Perfectionism/attention to detail	Bobby; Jordan; Lucy; Marcus; Piotr
Expertise	Bobby; Elias; Jordan; Lucy; Marcus; Michael; Rashan. Autistic adults (n = 1) School staff (n = 2)
Link with future plans	Elias; Marcus; Michael; Rashan. Autistic adults (n = 1) Parents (n = 2)

The most evident advantage of enabling the autistic children to engage with their interests in school was in curriculum access and learning, including their participation in classroom activities, independence and ability to gain intrinsic enjoyment from activities. This can be exemplified by Lucy, who had been taciturn in interviews and inconsistent and uncertain in Maths, but was observed to be significantly more voluble and engaged during a Reading activity based on a book about snakes, even though it took place in a relatively noisy classroom, thus potentially offering numerous distractions (R. Wood 2018). Indeed, this was a topic for which Lucy demonstrated great enthusiasm, exclaiming "*wow*" a few times, for example. During this activity of 20 minutes' duration, ending only when the class teacher introduced a new exercise, Lucy exhibited a variety of aptitudes: she was able to read out loud, find synonyms, ask questions ("*Does the milk snake drink milk*?"), pay attention to detail, comment spontaneously and on request on the text ("*The sunbeam snake is so shiny*!"), relate the book to her own experiences watching films about snakes at home and carry out independent, silent reading. In this, she was demonstrating a range of high level reading skills identified by the DfE (2015) as being linked to positive longer-term educational, health and employment outcomes.

Furthermore, this example also underscores my finding that the communication skills of some of the autistic children were better when centred on their interests. Bobby, for example, described as "non-verbal", not only manifested great concentration and a high degree of independence when the activity involved animals, but was able to name them and imitate their sounds, both spontaneously and on request from his TA. Similarly, Marcus struggled with open, opinion-based questions during our interviews, which he responded to with comments such as "*I don't know*", "*Not sure*" and "*Can't explain*", for example, rarely volunteering information. However, as this extract from a semi-structured interview illustrates, he had significantly less difficulty with the same question formats when they related to his interests, providing me with detailed information about the Coding Club he attended, which he described as "*epic*":

> Researcher: *Why is it epic?*
>
> Marcus: *Because you get to do like coding and make games*
>
> Researcher: *Fantastic*
>
> Marcus: *I made this epic game, it's called Pixel Rush. It's so cool*
>
> Researcher: *What's cool about it?*
>
> Marcus: *Well it means you have to try to get to the diamond and once you fall on like a spike, you've failed the level.*

Moreover, in attending Coding Club, Marcus was the only child in my cohort to take part in a regular extra-curricular activity out of usual school hours, thus highlighting the broader, inclusionary benefits of access to interests.

Consequently, this phenomenon revealed important advantages in learning, communication and social opportunities. For example, a teacher asserted in a semi-structured interview that

one of Piotr's classmates would bring him dinosaurs and make "*dinosaur noises*" as he knew Piotr liked playing with them, while I observed a child seeking out newspaper articles on action heroes for Rashan. When Elias was playing football, his collaborative interactions with the other children, anticipatory moves, assertiveness and general level of skill contrasted sharply with his curriculum activities with his one-to-one TA, set at pre-school level, where he seemed rather lost. Similarly, Jordan, whose great interest was Maths, not only invented number games to self-calm when he was feeling stressed – a phenomenon asserted by his teacher, TA and also observed by me - but applied numbers to a range of activities in school. For example, Jordan stated during interviews that numbers dictated his favoured subjects and groupings in class ("*I like working in a three because 3's my favourite number*") and the games he invented and played with his friends in break times ("*If we defeat 20 we get um 30 more power and if we defeat 30 we get 50 more*").

Similarly, when asked in a semi-structured interview about how school tests could be improved, Michael replied that assessment activities linked to his interests would make them "*great*". In addition, in a focus group, two of the parents shared the view that if their children's interests were nurtured in school, they would be more likely to find happiness in the future. They expressed the wish that their child's curriculum could be adapted to reflect this, a standpoint endorsed in an email interview by one of the autistic adults, who linked this trait with expertise. Furthermore, according to their questionnaires which focused in part on their wishes for future employment, four of the autistic children had longer-term ambitions which were linked to their interests, while one of the autistic adults who said she had struggled socially in school, stated that she had found kinship, a route to higher education and future employment when her interests were supported in school.

Interests and Support for Children

During interviews, when I asked the 36 members of staff in my study to describe what sort of

additional support the autistic children received in school, and to explain why it might be needed, 21 asserted that it was to keep the children on task, while 19 stated that it was to facilitate curriculum access, with these latter two reasons constituting the most common explanations cited. In addition, 16 staff members said that support was required to help promote good behaviour, 12 cited aid for independence, 7 socialisation and 5 emotional support. In other words, there is a significant overlap in some areas between the aims and intentions of school staff in providing additional support to the autistic children and the advantages of enabling them to access their interests which have just been described.

Indeed, this phenomenon was clearly understood and fruitfully applied by some of the school staff in my study. For example, two teachers asserted that by differentiating the learning programmes of the autistic children in their class around their interests, they were able to take part in the full curriculum. This is significant given that alternative curricula and learning targets can be a form of exclusion for pupils with SEND (special educational needs and disabilities) in schools (R. Jordan 2005; Liasidou 2012). One of these teachers also stated that this approach included assessment activities, saying that for an autistic boy, they "*follow his interests in everything.*" When asked in an interview about how she supported another autistic boy, a TA asserted that she uses "*specific strategies incorporating his interests*", including talking about the computer game *Angry Birds* to help to calm him down if he was stressed, while Elias's teacher said he employed his interest in football to help motivate him to complete tasks. Indeed, one teacher, a TA and a deputy Head Teacher stated that such an approach enabled them to make a breakthrough in terms of the overall participation and inclusion of an autistic child. This can be exemplified by a deputy Head Teacher who stated as part of her description of autism that Valentin was "*transformed*" when they did some work on planets with him. According to her, " *a good teacher will know to throw the plan in the bin, and run with this.*"

Moreover, as described earlier, some of the autistic children were subject to a high level of prompting, as well as being required to carry out repetitive, demotivating activities which contained little by way of evident learning outcomes. However, this situation was almost entirely reversed if the children were engaged and motivated via their interests. When reading a newspaper article on action heroes, for example, Rashan was observed to receive no prompting at all during the 13 minutes that the activity lasted. Bobby was also observed to complete tasks centred on animals without needing any support, and Michael carried out computer-based activities entirely independently. Furthermore, when prompting did take place, it was completely different in nature: negatively-worded reminders ("*No*", "*You need to look at the book*", "*Wait*") gave way to shared understandings, physical prompts were replaced by indicative gestures, remonstrations faded away, leaving room instead for encouragement and congratulation ("*Lovely*", "*Well done*"). Significantly, these same circumstances – ineffective, highly-prompted, negative input and effective, constructive support – sometimes occurred with the same member of staff and autistic child. The only evident difference in these situations was whether or not the child was interested and motivated to carry out the activity.

For example, Piotr who, as we have seen, was at times subject to a high level of prompting, exhibited 30 signs of approval during a structured observation of a Maths activity involving the placement of differently coloured plastic animals into bowls. These included independently putting the animals in the bowls, rummaging and selecting different ones from the pile, making them "walk" and standing up to reach the animals he needed. In another activity involving the development of early writing skills, which Piotr had chosen, he placed his hand over that of the TA, and guided her to make the swirling shapes that he wanted. This gentle, sensory approach appeared to suit both the TA and the child: they both seemed relaxed, even though in a complete reversal of roles, Piotr is prompting the TA. Indeed, not only does the TA encourage this approach, by stating "*good boy*" and "*beautiful*" on a few occasions, and affectionately calling

him "*darling*", but it appears to lead to more, not less compliance on Piotr's part: when the TA asks him to wipe the board clean or choose another pen, he does so. Moreover, during both of these exercises, Piotr was willingly seated alongside the TA, unlike during the bear-matching activity described previously, where the TA had struggled to hold him in place on her knee.

Similarly, in the reading activity about snakes described earlier, Lucy felt confident enough to challenge the TA when she thought she had made an incorrect factual assertion, which the TA responded to with humour. In this same activity, the TA also showed a range of pedagogical and support skills, such as guiding Lucy through the book with her questions, encouraging her to seek out information for herself, and congratulating Lucy on her knowledge. Therefore, being able to focus on the interests and motivations of the autistic children was additionally related to effective support, a better child-adult rapport and a higher level of staff skill. In addition, in some of these situations, the less intrusive support also created circumstances where peers would approach the autistic child, as they were less "velcroed" to the TA (Millar et al. 2002; Liasidou 2012).

Furthermore, while some of the school staff, in their descriptions of autistic people, had unwittingly employed "othering" terminology (Broderick and Ne'eman 2008; Hughes 2009), this positioning was occasionally altered when the benefits of supporting the intense interests of their autistic pupils were described. For example, when asked how she felt about having an autistic boy in her class, one teacher stated that, she had initially been "*worried*" about the prospect of him joining her class, as she perceived him as "*an extreme child*". However, she soon discovered that they both shared a strong interest in Disney films, which not only enabled her to set motivating work for him with ease, but facilitated a considerable rapprochement in their relationship:

> *He's now my absolute favourite child I have ever taught.* (…) *I can chat to him about The Princess and the Frog. I'm into that sort of thing too. If he comes in singing a song*

from a Disney film, I know what it is and I start singing with him. In some ways, we're on the same wavelength. I'm very Disneyfied.

Therefore, rather than "othering" this autistic boy and dreading his arrival in her class, their mutual interest had led to a degree of self-recognition on her part, and between them, shared understandings and a bond.

Disadvantages of Intense Interests

Notwithstanding the significant advantages to autistic children of activities focused on their interests, as well as the concomitant benefits to staff which have been suggested, some disadvantages were found in relation to this disposition. These were particularly identified by school staff, of whom 10 asserted in interviews that intense interests can form a barrier to learning, curriculum access and tests, while a similar number - 9 - had thought that this trait was an advantage in these areas (as shown in Table 1, above). The disadvantages of strong interests in the school environment are summarised in Table 2 below.

Table 2: Disadvantages of Intense Interests

Area of Impact	Participants Total children (n = 10); autistic adults (n = 10); parents (n = 10); school staff (n = 36)
Barrier to learning, curriculum access & tests	Bobby; Jordan; Piotr; Rashan Autistic adults (n = 1) Parents (n = 4) School staff (n = 10)
Barrier to socialisation	Alex; Elias; Rashan Parents (n = 1) School staff (n = 1)
Barrier to inclusion in school community	School staff (n = 1)

For example, Jordan's parents said during a focus group discussion that they were concerned that sometimes he would ruin Maths tests because he was more preoccupied with a number game of his own invention, rather than complying with the requirements of the test. Indeed, this trait and other aspects of his personality led them to consider that he had OCD. Similarly,

some of the school staff expressed frustration that the autistic children would insist on talking or writing about their interests, even if they did not correspond with the activity requested, meaning their access to the curriculum was curtailed. For example, one teacher complained that the writing of an autistic boy had become *"more and more dominated by his preoccupations and obsessions"* and so was worried this would create difficulties in Writing tests. Other school staff shared a similar disquietude at not being able to introduce the variety the full school curriculum required, or were frustrated in their attempts to direct the autistic children's learning.

In addition, Piotr's teacher, when asked about his inclusion in activities with his peers, considered that his preoccupations created a barrier to this, stating that "*persuading him to give something a try can be difficult*". Similarly, Alex's mother thought that friendships were the lynchpin to her son's happiness in school, but feared that being "*selfish*" in his approach to play and communication would cause him to be shunned socially. Moreover, in response to a question about why Valentin needed extra support, his TA replied that one reason was because he was "*selfish*".

What is noteworthy about these findings, however, is that the areas impacted negatively are significantly fewer than those impacted positively overall. Furthermore, it is not too much of a stretch to hypothesise that if autistic children use their interests to relax and cope with stress, this circumstance might be determined in part by the level of strain they are experiencing in school (Goodall 2018; Humphrey and Lewis 2008; Humphrey and Symes 2011). This sense of stress might in itself be exacerbated by being subject to repetitive and demotivating activities, as seen in the handwriting activity earlier (when Rashan resorted to chanting lines from action hero videos), or in the bear-matching exercise, which was heavily prompted. Thus a vicious cycle is created of task repetition leading to heavy prompting from the staff member and a continued lack of compliance from the autistic child. This not only hampers the desired support

outcomes of curriculum access and independence, but frustrates the child at the same time. Therefore, the disadvantages of what has been termed a monotropic thinking style in school can at least be partially ascribed to the very problems that schools create in the first instance.

Discussion

In my study, and notwithstanding some adverse effects which in themselves could be explained by a problematic school environment (Goodall 2018; Humphrey and Lewis 2008; Humphrey and Symes 2011), I found a strong, positive correlation between enabling the autistic children to access their intense interests and a range of educational and affective benefits. These circumstances also created at times a power shift from the adult to the child, which resulted, perhaps counterintuitively, in greater, not less, compliance from the child, as well as opportunities for peer engagement. Given that behavioural problems and social difficulties are considered to be a significant barrier to the inclusion of autistic children in schools (Emam and Farrell 2009; Fava et al. 2012; Moyes 2002), the tendency to have intense areas of focus, considered by some to be linked to a monotropic thinking style (Murray et al. 2005), is revealed as predominantly an advantage in educational settings when supported and encouraged by school staff.

Consequently, the importance of perceiving this disposition as a strength (Winter-Messiers 2007) rather than a deficit which must somehow be remedied (Boyd et al. 2011; Stocco, Thompson, and Rodriguez 2011), is underlined. Indeed, according to Gunn and Delafield-Butt (2016), bringing the child's interests into the classroom "brings the child into the classroom" (p. 425), potentially offering a reversal to the cycle of unhappiness, educational exclusion and impoverished longer-term outcomes autistic children currently endure (Batten, Corbett, Rosenblatt, Withers and Yuille 2006; Humphrey 2008; Pellicano et al. 2018; Wittemeyer et al. 2011). Moreover, rather than being "fixed", autistic people have been found to change their interests over time, as well as to develop strategies to adapt to "the demands of their

environment, to diversify them, or to decrease the amount of time devoted to them" (Mercier et al. 2000, p. 420). Indeed, according to Grove et al. (2018), the strong interests of autistic people might not be as narrow as previously thought.

Moreover, the intense concentration of autistic people has also been associated with a deep sense of well-being, or "flow states" (Csikszentmihalyi 1990; McDonnell and Milton 2014; R. Wood and Milton 2018), a concept which permits the pejoratively framed notion of "repetitive behaviour" to be more constructively considered (McDonnell and Milton 2014). Indeed, Bobby, whose Reception class was linked both to the nursery class and the "outdoor classroom", appeared to gain greatly from this fluid, "free flow" system, where he was observed to be purposeful, usefully engaged and content, requiring little or no TA input. Such an arrangement, while being intrinsically rewarding, also permits the children greater independence (McDonnell and Milton 2014), and appears to "ward against alienation and anomie" (Milton 2017, p.1675), arguably as much for school staff as for autistic children. By contrast, however, children who are subject to a high degree of prompting and repeated instructions have less access to "flow", as well as daydreaming and mind-wandering, which have been positively associated with autobiographical planning and creative problem-solving, for example (Mooneyham and Schooler 2013).

My study also suggests that providing curriculum activities based on the strong interests of autistic children can have a reciprocal, enabling impact on school staff, leading to a decrease in effortful but ineffective prompting and a switch to more positive instructions on their part. Indeed, some school staff already applied their understanding of the value of the deep interests of the autistic children, and in so-doing the emphasis shifted from intervention aimed at the remediation of impairment (Milton 2014) to acceptance and relationship-forming, considered to be key components of teacher well-being (Spilt, Koomen and Thijs 2011) and effective educational inclusion (Jones et al. 2008). Therefore, not only does the emphasis placed on task

repetition for low attaining pupils need to be revaluated (Dunne et al. 2007), but the reliance on prompting as an autism intervention technique (Berkowitz 1990; Fentress and Lerman 2012) must also be questioned.

In addition, the main reasons cited by school staff for providing additional assistance to the autistic children – the need to focus them on task, facilitate curriculum access and independence – were often matched by the advantages of enabling them to develop their interests, with support for socialisation and emotional well-being often similarly constructively addressed. These findings are significant since teachers are "vulnerable to burnout due to the unique characteristics" of autistic pupils (Emam and Farrell 2009, p. 415) and might experience stress by dint of their presence in the classroom (Glashan, Mackay and Grieve 2004; Syriopoulou-Delli, Cassimos, Tripsianis and Polychronoloulou 2012). Indeed, Allan (2008), in the broader context of pupils with SEND, refers to the "confusion, frustration, guilt and exhaustion experienced by teachers" (p. 25) as legislation and policies on inclusion founder when applied to practical situations. Thus, given that negative attitudes towards autistic children from teachers can also lead to social exclusion from peers (Humphrey and Symes 2011), a further rationale is provided for creating educational environments which permit the intense interests of autistic children to be valued and encouraged.

Furthermore, it is perhaps axiomatic to suggest that all children, whether or not they are autistic, will be more motivated, independent and focused if the activity is intrinsically interesting to them (Schiefele 1991). Indeed, Hidi and Renninger (2006) assert that there is overwhelming evidence that interest has a powerful influence in terms of students' attention levels and goals, helping them to feel positive about their abilities and, importantly, creating a shift from external to internal support. Similarly, according to Ainley, Hidi and Berndorff (2002), interest can be linked with persistence, which in turn leads to greater learning. However, this positive dynamic is unlikely to occur if the priorities of teachers override pupils' interests (Tomlinson et al.

2003), or if fear of academic failure, such as illiteracy, means that their motivations and interests are not taken into account (Johnston 1985; Schiefele 1991). Moreover, according to Tomlinson et al. (2003), "equality of opportunity" can only become a reality "when students receive instruction suited to their varied readiness levels, interests and learning preferences" (p. 120). Such an approach, they argue, is one of the hallmarks of effective differentiation, and enables pupils to find "flow" (Tomlinson et al. 2003). Therefore, adapting the school curriculum to incorporate the interests of autistic children could provide a better understanding of how to support the motivations of all children in school, reinforcing the point that adjustments for pupils with SEND potentially benefit all learners (Jones 2002; Woronko and Killoran 2011).

Nevertheless, an intense focus on certain activities, a trait which appears to apply particularly to autistic children, potentially presents school staff, who are under some obligation to provide a "broad and balanced curriculum" (DfE 2014) with a problem, especially in the earlier stages of education where such formats are valued (Campbell 1993; Boyle and Bragg 2013). Indeed, teachers must try to navigate a seemingly inflexible, prescriptive education system which apparently "cannot be altered" to accommodate autistic children (Glashan et al. 2004, p. 56), despite their increasing numbers in the mainstream classroom (Emam and Farrell 2009). As a result, teachers might possess "positive attitudes in principle" (Lindsay 2007, p. 13), about educational inclusion, but these are inevitably tempered by the demands of meeting the curriculum. School staff must, therefore, be able to modify their approach for autistic children, especially as flexible teaching has been associated with high-quality pedagogy and overcoming inequality (Siraj-Blatchford et al. 2011). In addition, the unquestioned, high value placed on "broad and balanced" education programmes (Alexander 2000; DfE 2014) should be reconsidered if schools are to be truly inclusive and accessible, with curriculum planning incorporating from its inception a diversity of learning styles and needs (R. Jordan 2005).

The concept of monotropism also implies a difficulty in shifting attention from one activity to another, the expectation of which might cause acute distress for an autistic person (Murray et al. 2005; McDonnell and Milton 2014). Consequently, school staff need support and training to be able to navigate and understand how this trait might be manifested in school, while research is needed to identify and distinguish "flow states" from "negatively experienced compulsions" (McDonnell and Milton 2012, p. 45) which are associated with anxiety (Grove et al. 2018). Furthermore, the use of wearable devices which detect stress (Sano and Picard 2013) could also be fruitfully explored in educational settings, potentially providing teachers with important information about the anxiety levels of the autistic children in their class. In addition, there is not only a need for more empirical data to support the concept of monotropism and an "interest model" of autism (McDonnell and Milton 2014; Murray 2018), but for research which would consider jointly the role of the interests and motivations of autistic and non-autistic children in schools.

Conclusion

In a reversal of typical assumptions and understandings about autism and its association with repetitive behaviour, rigidity and being routine-dependent (APA 2013), when the "interest, attention and motivation" (Milton 2017, p. 1674) of autistic children are attended to, a range of benefits potentially ensue for them and school staff. Within this more positive framing, autism can be conceived "as a cognitive difference or style", rather than a "mental disorder" (Lawson 2011, p. 41), and the strong interests of autistic children could be fruitfully leveraged in educational settings to increase their participation in the curriculum and other aspects of school life (Winter-Messiers 2007; Koenig and Williams 2017). Moreover, while for some children, their preoccupations can present a barrier to learning and socialisation, this might in itself be a coping strategy to deal with the stress of being in school (Humphrey and Lewis 2008; Goodall 2018), highlighting the importance of "psychosocial factors, more particularly the

interaction with the immediate social environment" (Mercier et al. 2000, p. 423) in relation to intense interests.

Such an approach is also coherent with a "strengths-based" model of autism (Ne'eman 2012), where pejorative framings such as obsessiveness (Baron-Cohen and Wheelwright 1999) and perseveration (Vismara and Lyons 2007) are re-evaluated within more positive formulations such as motivation, determination (Williams 1992/1999; Winter-Messiers et al. 2007), perseverance and "grit" (Duckworth, Peterson, Matthews and Kelly 2007). These circumstances could potentially benefit all children if their motivations are similarly attended to (Tomlinson et al. 2003; Hidi and Renninger 2006), representing a shift away from the current petrification of inclusionary ideals into a "special education artefact" (Liasidou 2012, p. 75), whereby certain children are constructed as "strangers" (Slee and Allan 2001, p. 178) or simply as "failures" (Allan 2010, p. 609). Instead, life at school is considered a matter of "community, social capital, equality and respect" (Thomas 2012, p. 317) for all of its members. As a result, the unhappiness, fractured educational inclusion and poor longer-term outcomes of autistic children (Goodall 2018; Humphrey and Lewis 2008; Humphrey and Symes 2011; Wittemeyer et al. 2011) – and others - might finally be addressed.

Acknowledgements

With thanks to Professor Francesca Happé and Dr Dinah Murray for their suggestions in the planning of this article.

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